

## Patent Abstracts of Japan

PUBLICATION NUMBER : 07267624  
PUBLICATION DATE : 17-10-95

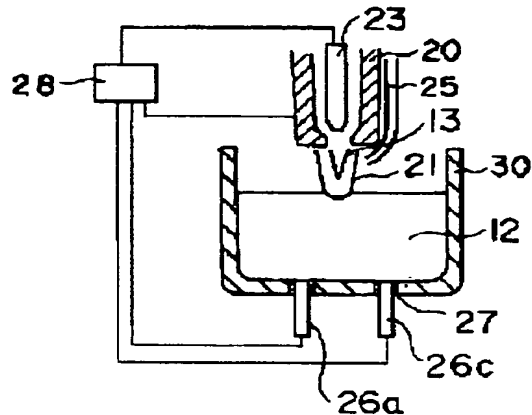
APPLICATION DATE : 29-03-94  
APPLICATION NUMBER : 06059312

APPLICANT : KAWASAKI STEEL CORP;

INVENTOR : SAKAGUCHI YASUHIKO;

INT.CL. : C01B 33/037

TITLE : PURIFICATION OF SILICON AND  
APPARATUS THEREFOR



**ABSTRACT :** PURPOSE: To enable high-efficiency production of silicon of high purity by permitting the track of the electric current generated between electrodes provided with the bottom of the vessel for the molten silicon and the plasma torch jetting a plasma jet gas to scan the surface of the molten silicon.

CONSTITUTION: In the silicon purifier provided with the vessel 30 for holding the molten silicon and the plasma torch 20 which is connected to the plasma generator 28 and jets the plasma gas containing less than 20 vol. % of steam toward the surface of the silicon melt, a plurality of electrodes 26<sub>a-d</sub> are set to the bottom of the vessel 30 and the power source is provided so that the voltage which has phase difference and varies periodically may be loaded between the plasma torch 20 and the bottom electrodes 26<sub>a-d</sub> and the track of the electric current generated between the plasma torch 20 and the electrodes 26<sub>a-d</sub> is made it possible to scan the surface of the silicon melt. Thus, the contacting area between the high-temperature plasma and the silicon surface is largely expanded to increase the removal rate of boron in the silicon whereby the purification time can be shortened.

COPYRIGHT: (C) JPO